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In the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Canceled).

2. (Previously Presented) A compound of claim 19, wherein the alternating conjugated double and triple bonds are formed by polymerization of diacetylene-functionalized dendritic polymers.

3. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a dendrimer.

4. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a hyperbranched polymer.

5. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a hyperbranched polymer having an average degree of branching from about 0.25 to about 0.45.

6. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a dendron.

7. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a dendrigraft.

8. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a dendronized linear polymer.

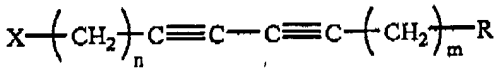
9. (Previously Presented) A compound of claim 2, wherein the dendritic polymer is a tecto-dendrimer.

10. (Previously Presented) A compound of claim 19, wherein the sensory group is attached directly to a dendritic polymer block of the cross-linked material.

11. (Previously Presented) A compound of claim 19, wherein the sensory group is attached to a dendritic polymer block of the cross-linked material through a spacer.

12. (Previously Presented) A compound of claim 11 wherein the spacer through which the sensory group is attached to the dendritic segment comprises a diacetylene or polydiacetylene moiety.

13. (Previously Presented) A diacetylene functionalized dendritic compound obtained by reaction of a dendritic polymer having at least two different types of reactive end-groups with a diacetylene reagent having the following general formula:



wherein X is a group that reacts with one or more end groups of the dendritic polymer; R is a sensory group; and n and m are integers.

14. (Previously Presented) A compound of claim 13 in which X is Cl-, Br-, I-, p-tosyl, mesyl, acryloxy, isocyanato, epoxy, $CH_3OC(O)$-, ClC(O)-, N-hydroxysuccinimidyl-C(O)-, pentafluorophenoxy-C(O)- or p-nitrophenoxy-C(O)-.

15. (Previously Presented) A compound of claim 13 in which n is 0 to 25.

16. (Previously Presented) A compound of claim 13 in which m is 0 to 25.

17. (Canceled).

18. (Currently Amended) A compound of claim 13 in which ~~the dendritic polymer has~~ one of the at least two different types of reactive end-groups are $-NH_2$ end-groups.

19. (Currently Amended) A compound comprising dendritic polymer moieties linked to one another by a moiety having alternating conjugated double and triple bonds, and at least one sensory group bonded to the compound, the dendritic polymer moieties having at least two different types of reactive and/or reacted end-groups.

20. (Currently Amended) A compound of claim 19 in which the dendritic polymer moieties have ~~$-NH_2$ and~~ -OH end-groups, and $-NH_2$ end-groups and/or reacted moieties of $-NH_2$ end-groups.

21. (Previously Presented) A compound of claim 20 in which the dendritic polymer moieties are polyamidoamine (PAMAM) dendrimer moieties.

22. (Currently Amended) A compound of claim 20 in which the PAMAM dendrimer moieties have 25% $-NH_2$ end-groups and/or reacted moieties of $-NH_2$ end-groups, and 75% -OH end-groups.

23. (Canceled).

24. (Previously Presented) A compound of claim 19, wherein the sensory group is selected from the group consisting of peptides, carbohydrates, nucleic acids, biotin, avidin, histamine, chromophores, antigens, antibodies, enzymes, chelating compounds, molecular recognition complexes, ionic groups, polymerizable groups, linker groups, electron donors, electron acceptors, hydrophobic groups, hydrophilic groups, receptor binding groups, antibodies, and combinations thereof.

25. (Previously Presented) A method of detecting and/or quantifying the amount of an analyte in a sample, comprising:

contacting a sample that is to be analyzed for a particular analyte with the compound of claim 19;

allowing specific binding between the analyte and the sensory group;

monitoring a detectable change caused by specific binding between the analyte and the sensory group; and

correlating the detectable change with the presence of an analyte in the sample, and optionally correlating the detectable change with an amount of analyte present in the sample.

26. (Original) The method of claim 25 where the sensing material is imbedded in or deposited on a solid substrate.

27. (Original) The method of claim 26 where the substrate is glass, quartz, silicon, other metals, wood, plastic, paper, cellulose or nitrocellulose.

28. (Original) The method of claim 25 in which detection is achieved by means of a visible color change.

29. (Original) The method of claim 25 in which quantitative detection is achieved by means of a color change measured with an ultraviolet/visible spectrometer.

30. (Original) The method of claim 25 in which detection is achieved by means of a change in fluorescent properties.